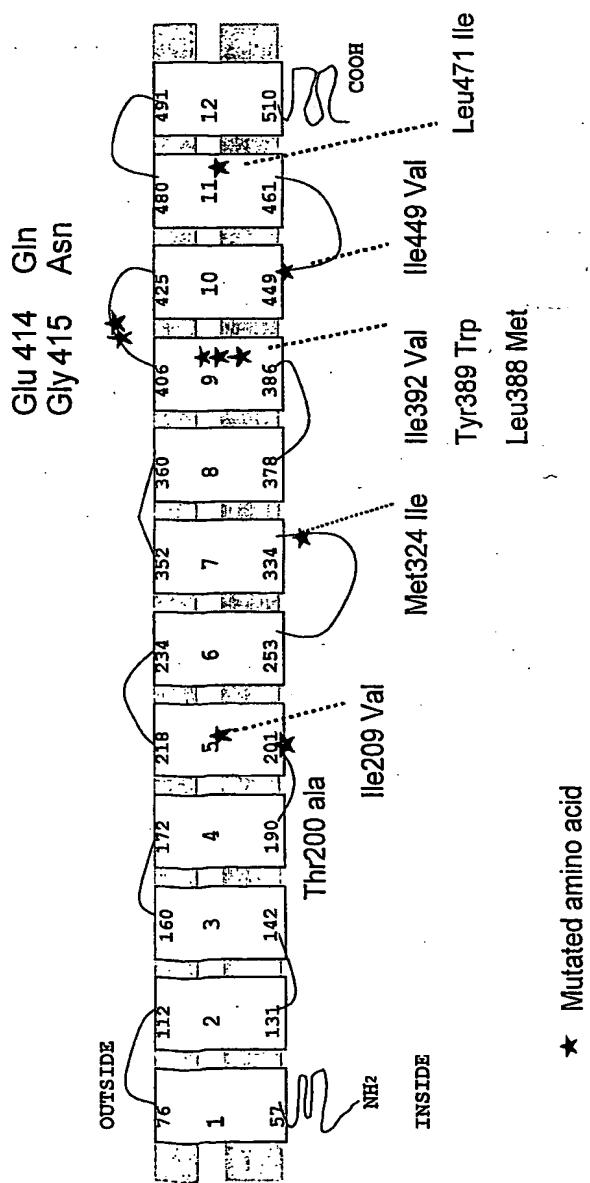


**Figure 1:** Localisation of mutations in Fermichamp HXT3

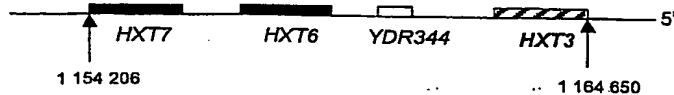


**Figure 2A** Construction of V5 strains with integrated *HXT3* genes

## *HXT3* integration in V5 *hxt1-7Δ* strain

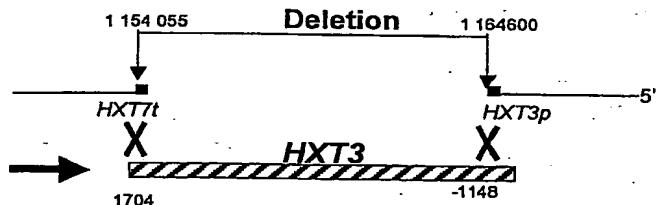
### HXT3-6-7 locus in wild

type V5 strain

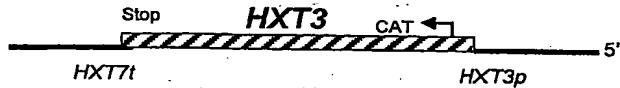


## Chromosomal integration by homologous recombination in V5 hxt1-7Δ yeast strain

## Fermichamp or V5 HXT3 PCR amplification



### Integrated *HXT3* gene



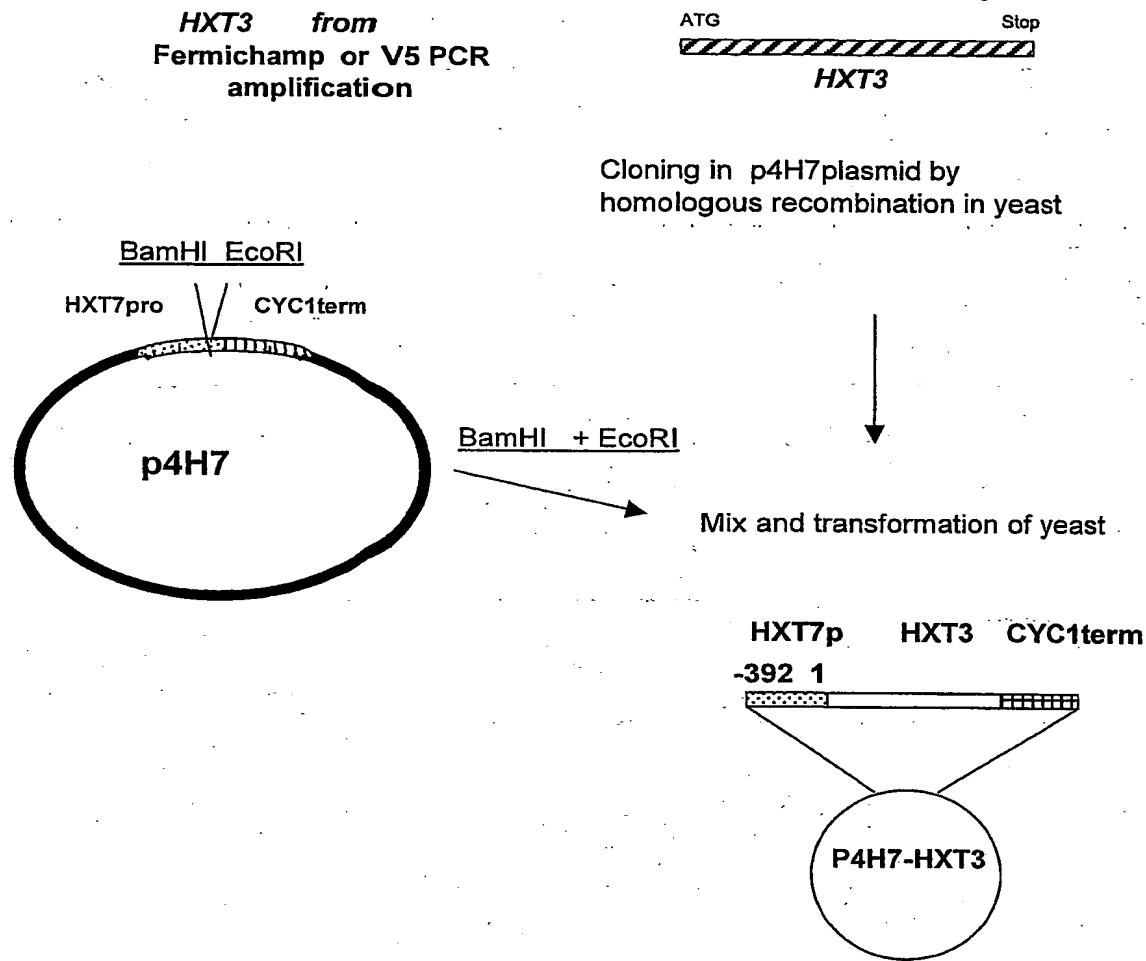
**Figure 2B : HXT3 ORF cloning in multicopy plasmid p4H7**

Figure 3A glucose and fructose utilisation by *HXT3* (V5 or Fmp) single copy gene expression

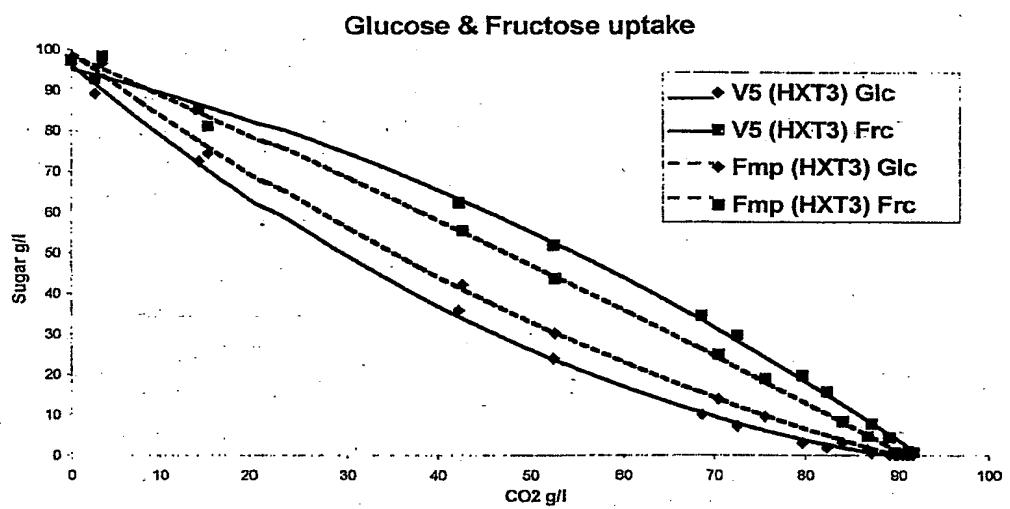


Figure 3B: glucose/fructose ratio of *HXT3* (V5 or Fmp) single copy gene expression

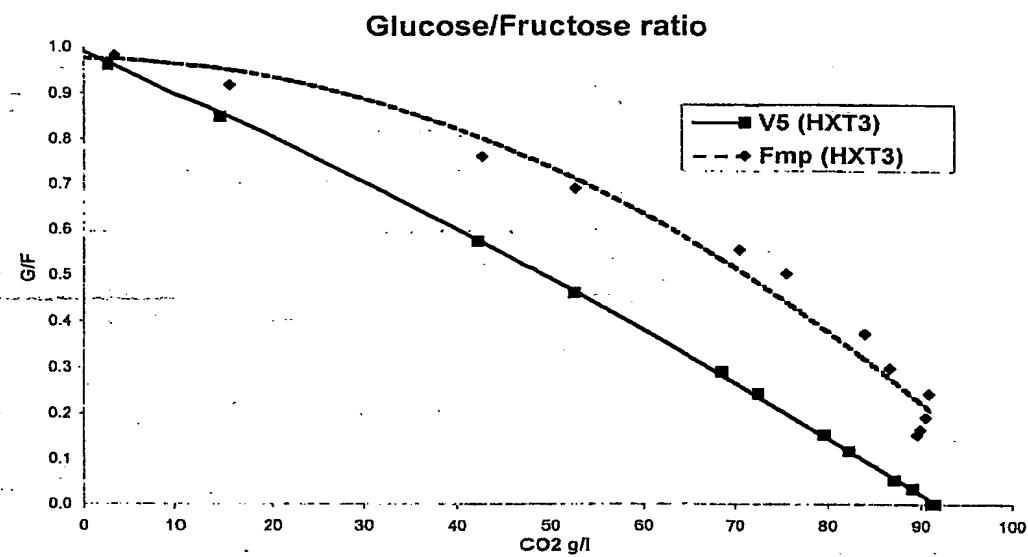
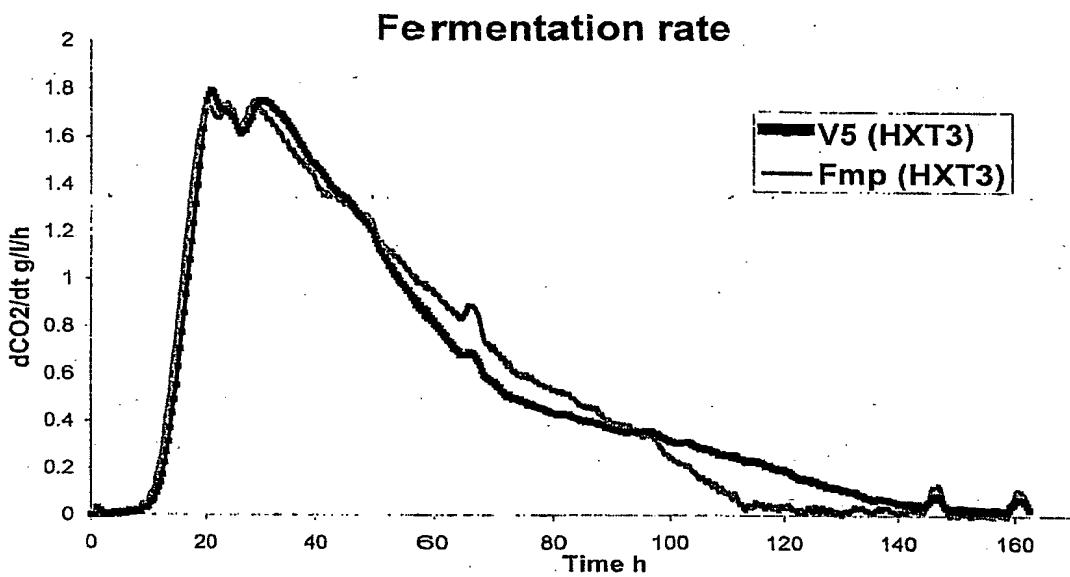
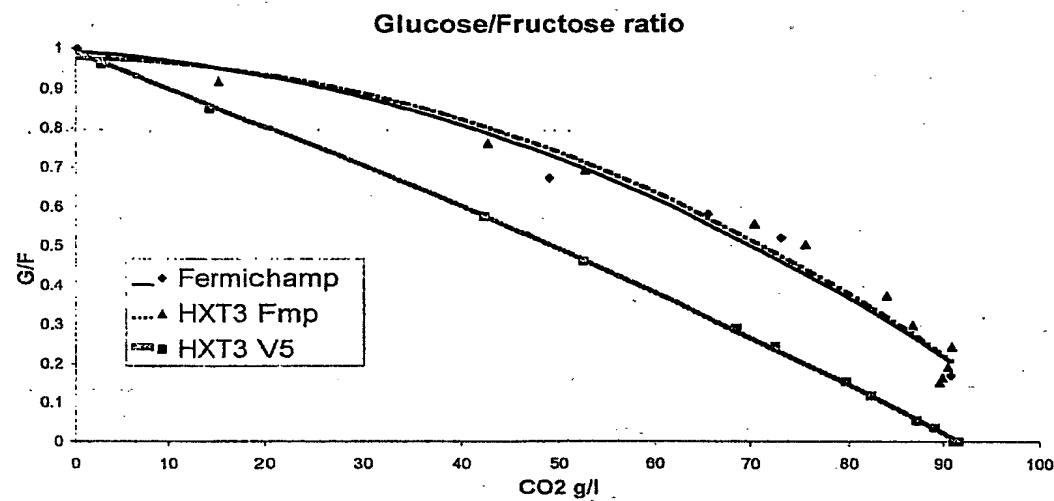


Figure 3C: fermentation rate of *HXT3* (*V5* or *Fmp*) single copy gene expression

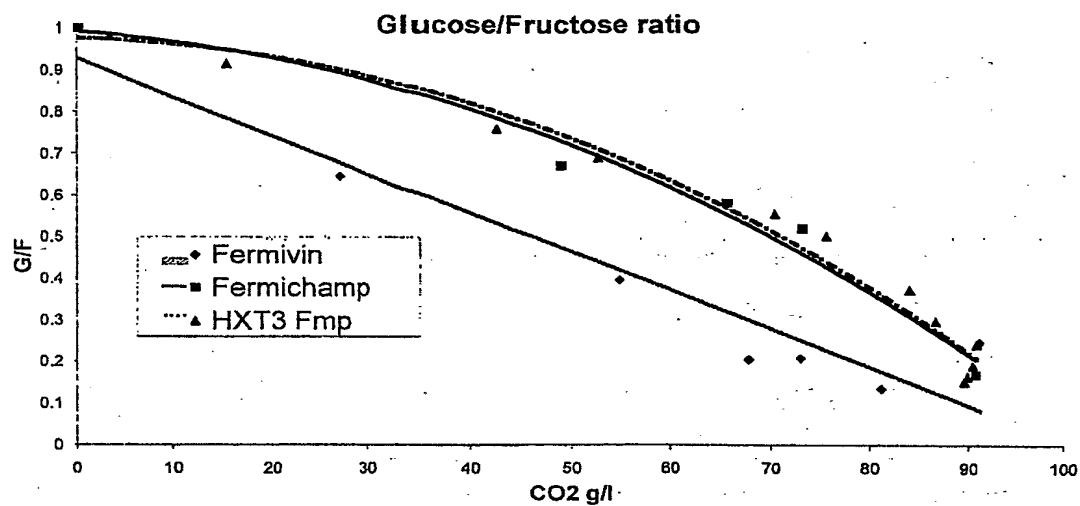


**Figure 3D**

Comparison of Glucose / Fructose ratio between Fermichamp & *HXT3* (V5 or Fmp) single copy gene expression



**Figure 3 E : Comparison of Glucose / Fructose ratio between Fermichamp, Fermivin & *HXT3 Fmp* single copy gene expression**



**Figure 4A : glucose and fructose utilisation by multicopy overexpression of *HXT3* (V5 or Fmp)**

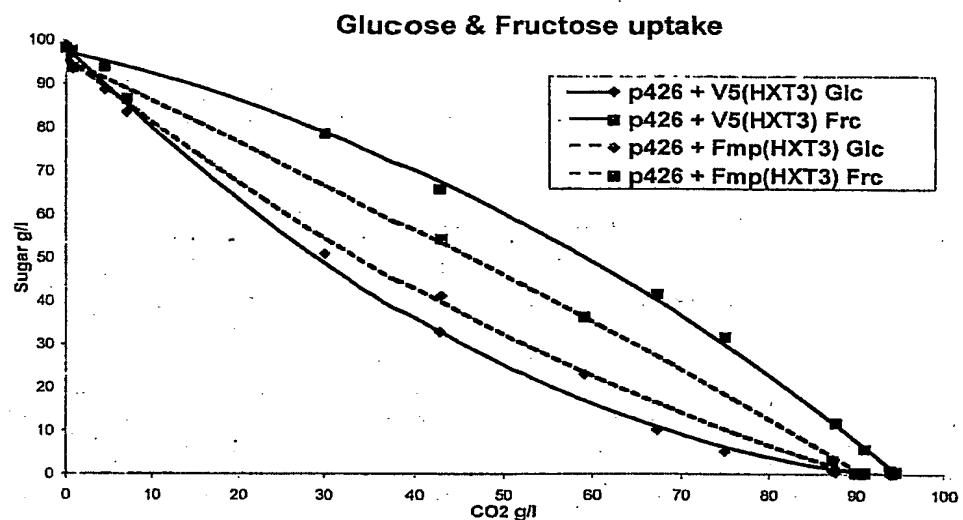
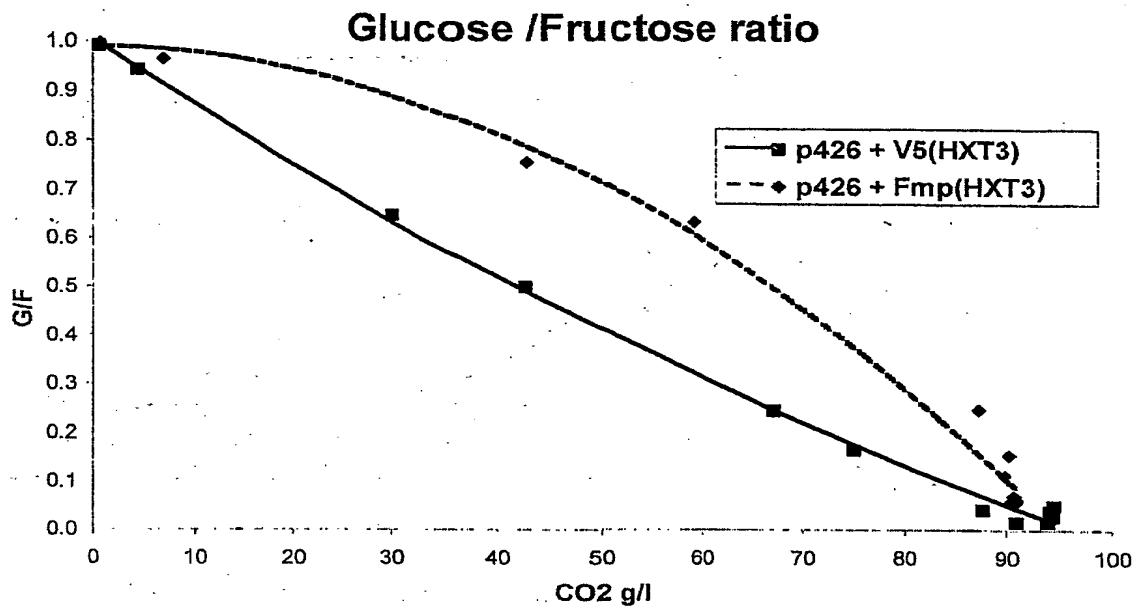
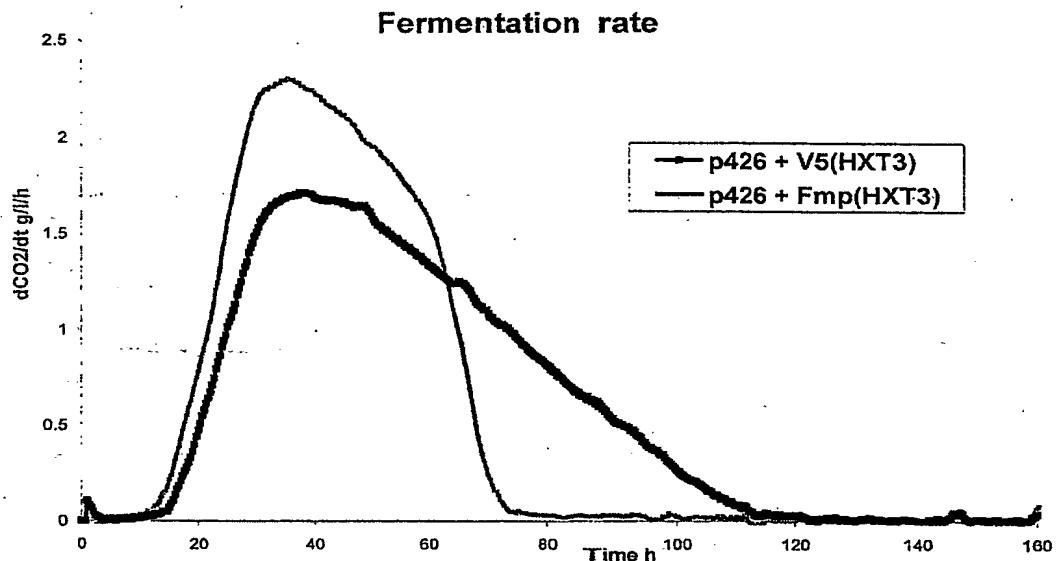


Figure 4B : glucose/fructose ratio by multicopy overexpression of *HXT3* (V5 or Fmp)



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Figure 5 : Multicopy overexpression of *HXT3* (V5 or Fmp) on Glucose + Fructose (50/50) must (200g/l)



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**Figure 6A** : Multicopy overexpression of *HXT3* (V5 or Fmp) on pure Fructose must (200g/l)

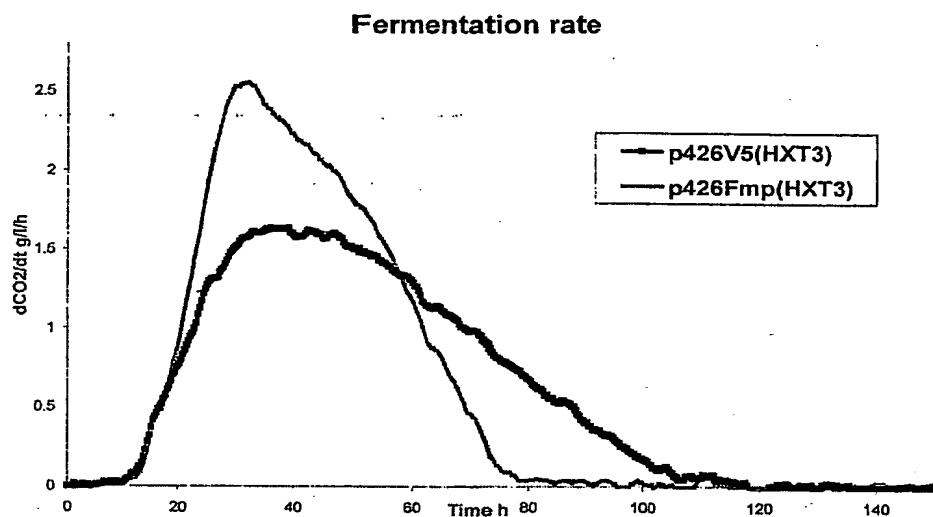


Figure 6B : Multicopy overexpression of *HXT3* (V5 or Fmp) on pure Glucose must (200g/l)

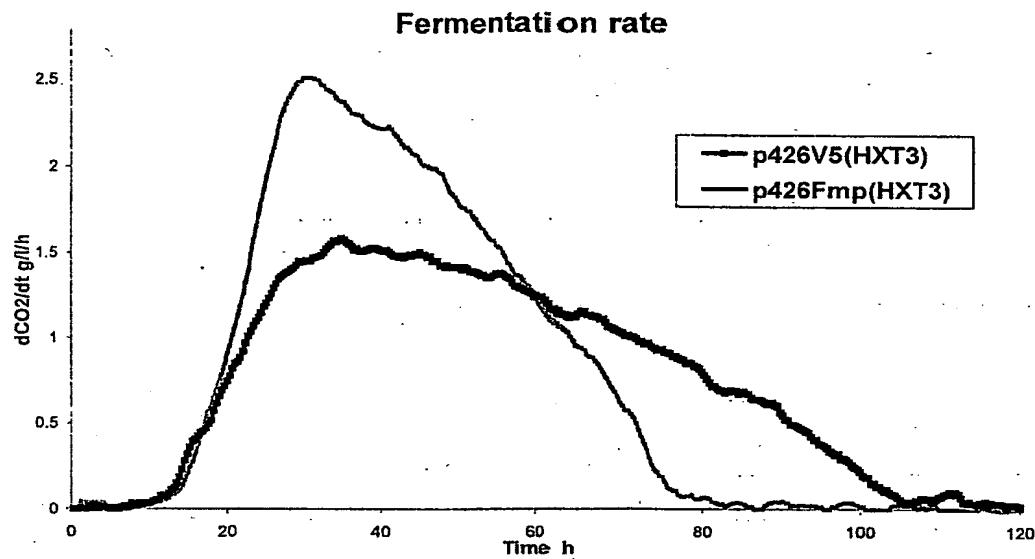


Figure 7A : Single copy expression of *HXT3* (V5 or Fmp) on pure Fructose must (200g/l)

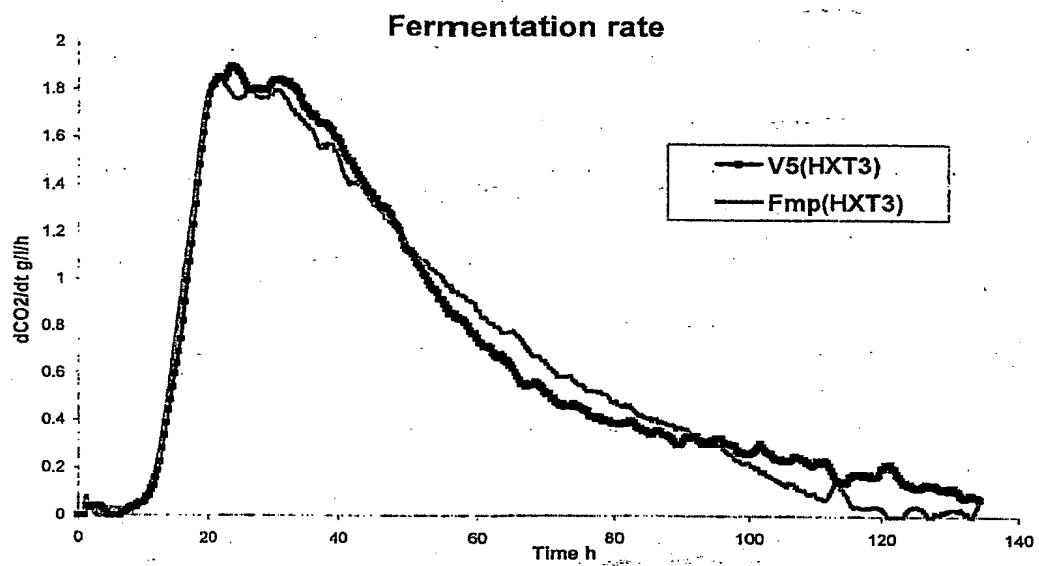


Figure 7B : Single copy expression of *HXT3* (V5 or Fmp) on pure Glucose must (200g/l)

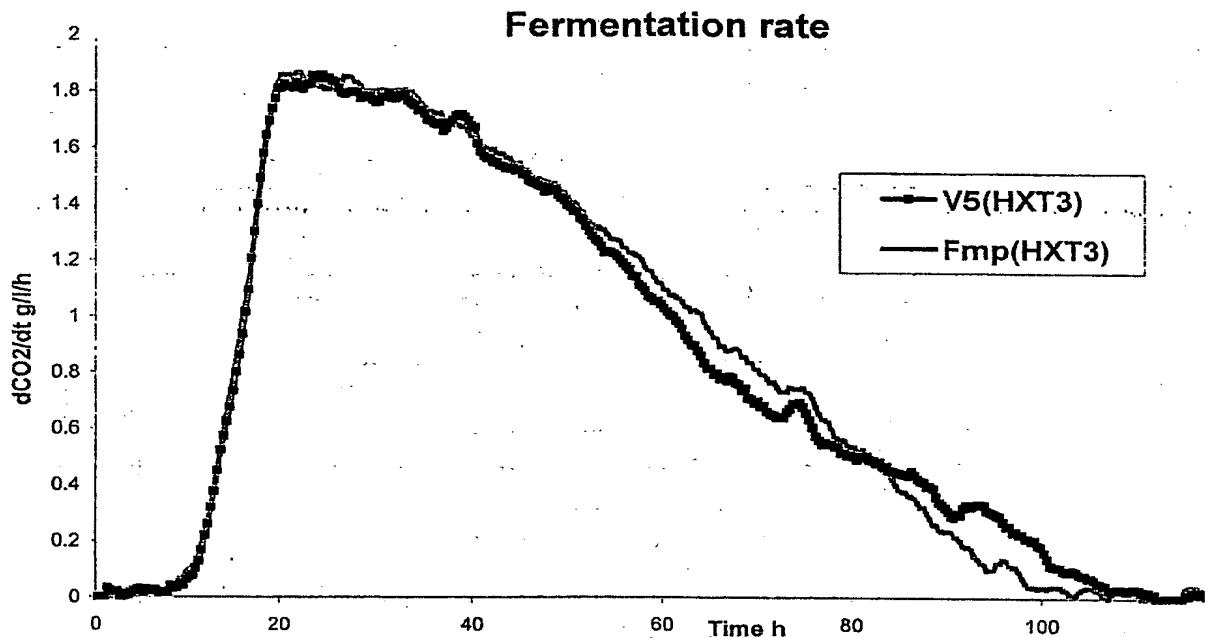
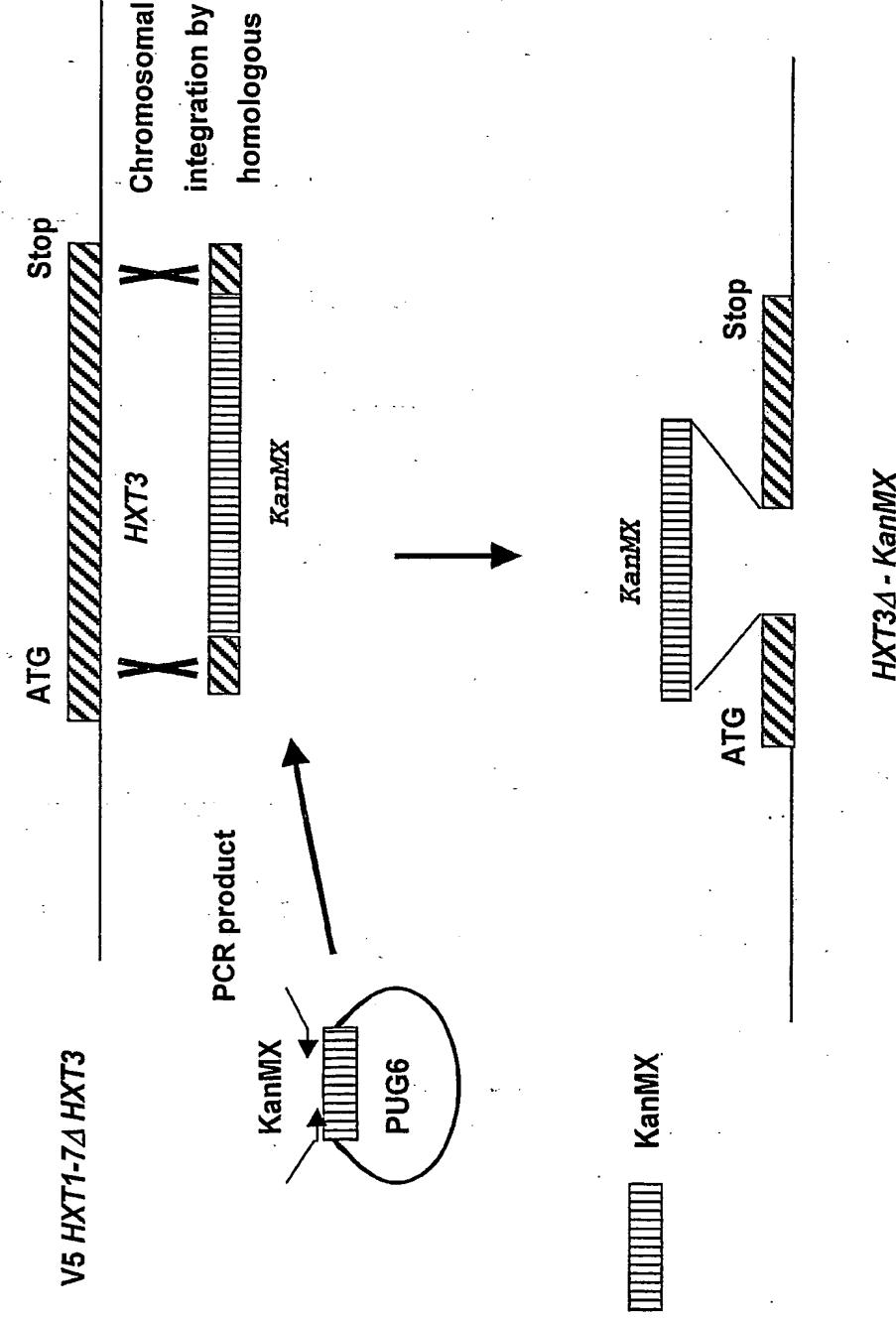


Figure 8: Construction of strains that contain a single, inactive, HXT3 gene, general scheme of strains construction



**Figure 9:** Constructed strains comprising a single, inactive *HXT3* gene

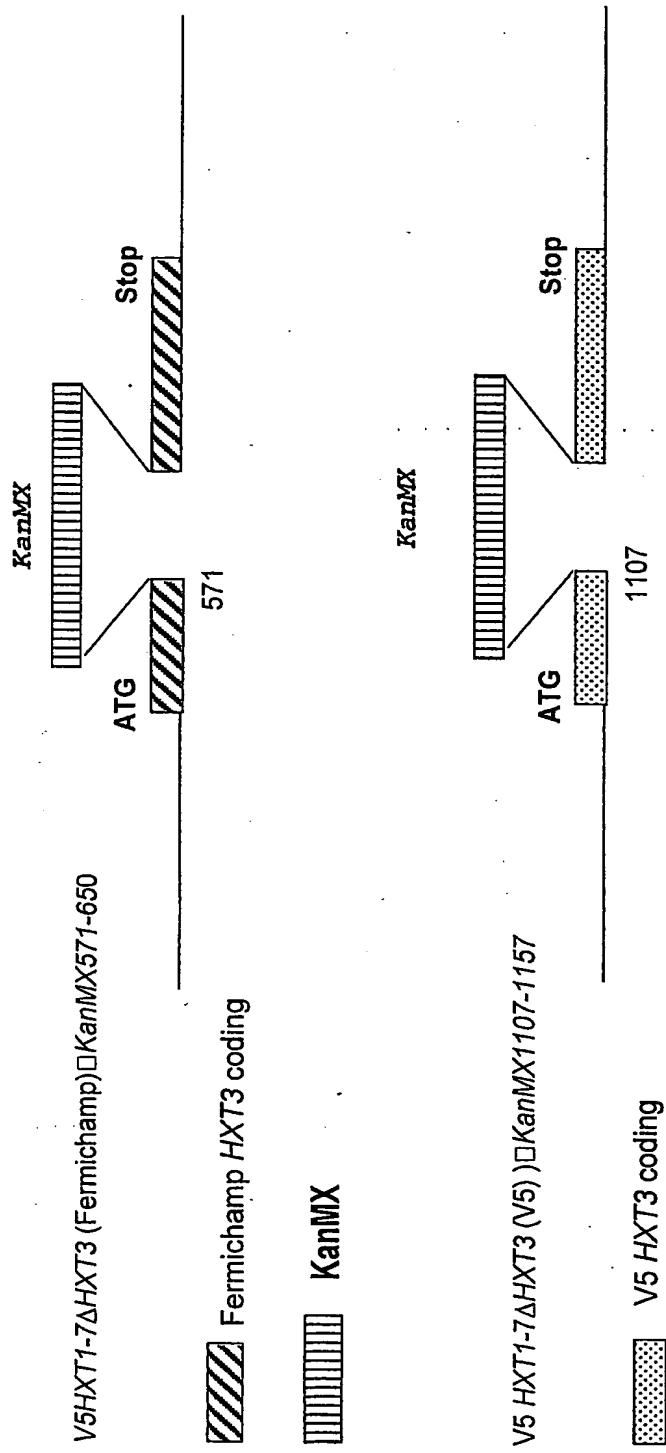
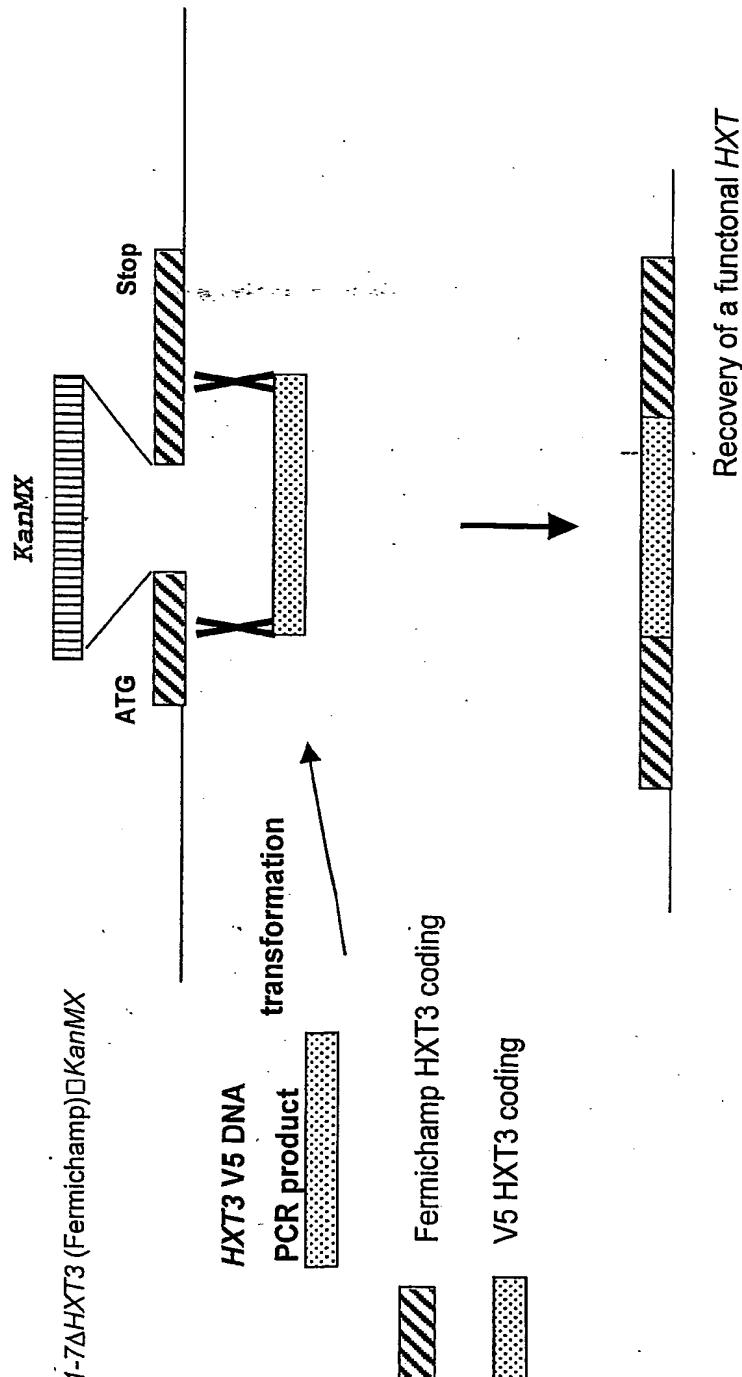
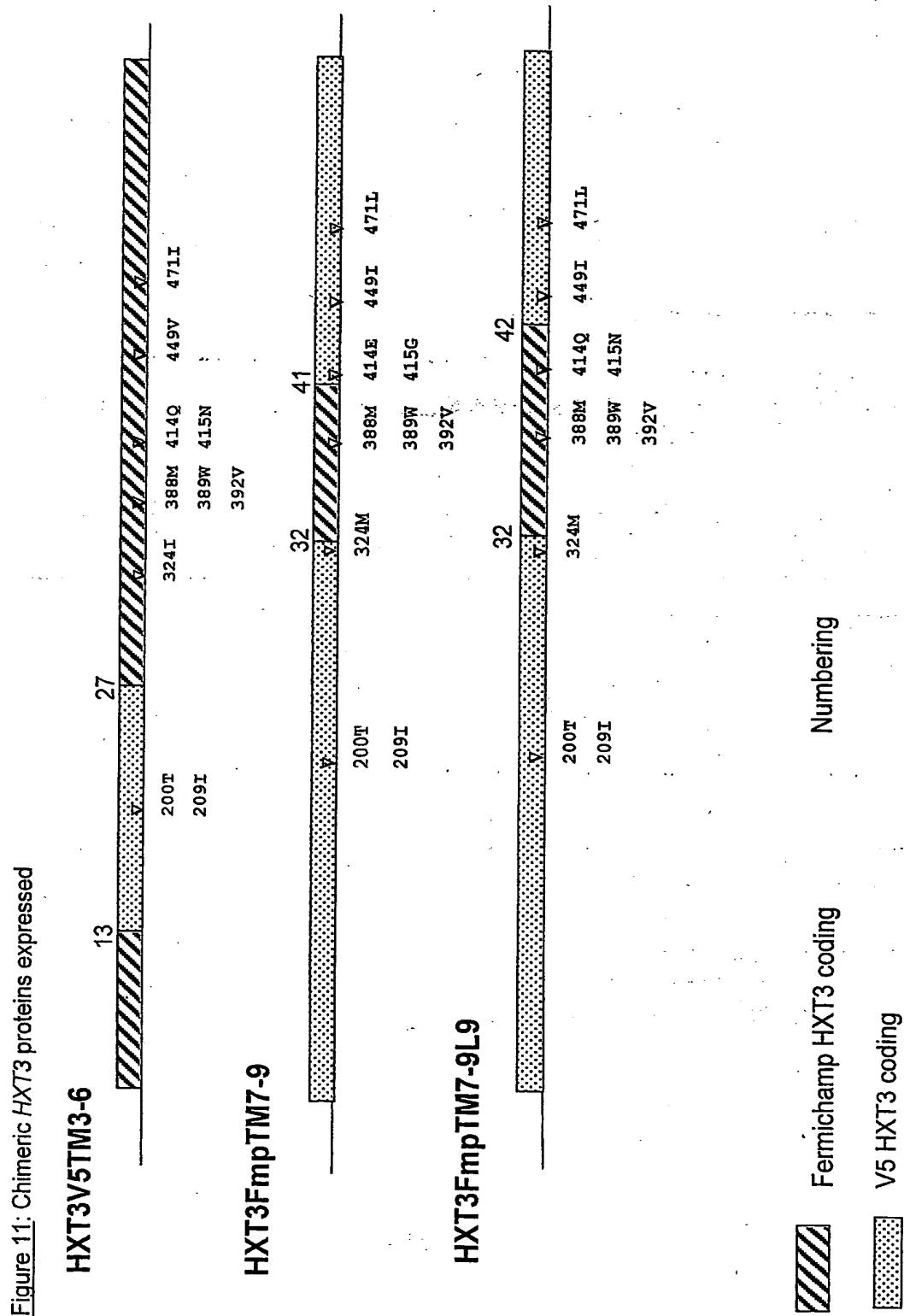


Figure 10: Construction of strains expressing *HXT3* chimera: principle of construction



Clones with *HXT3* chimera are selected on glucose

Growth on glucose is restored



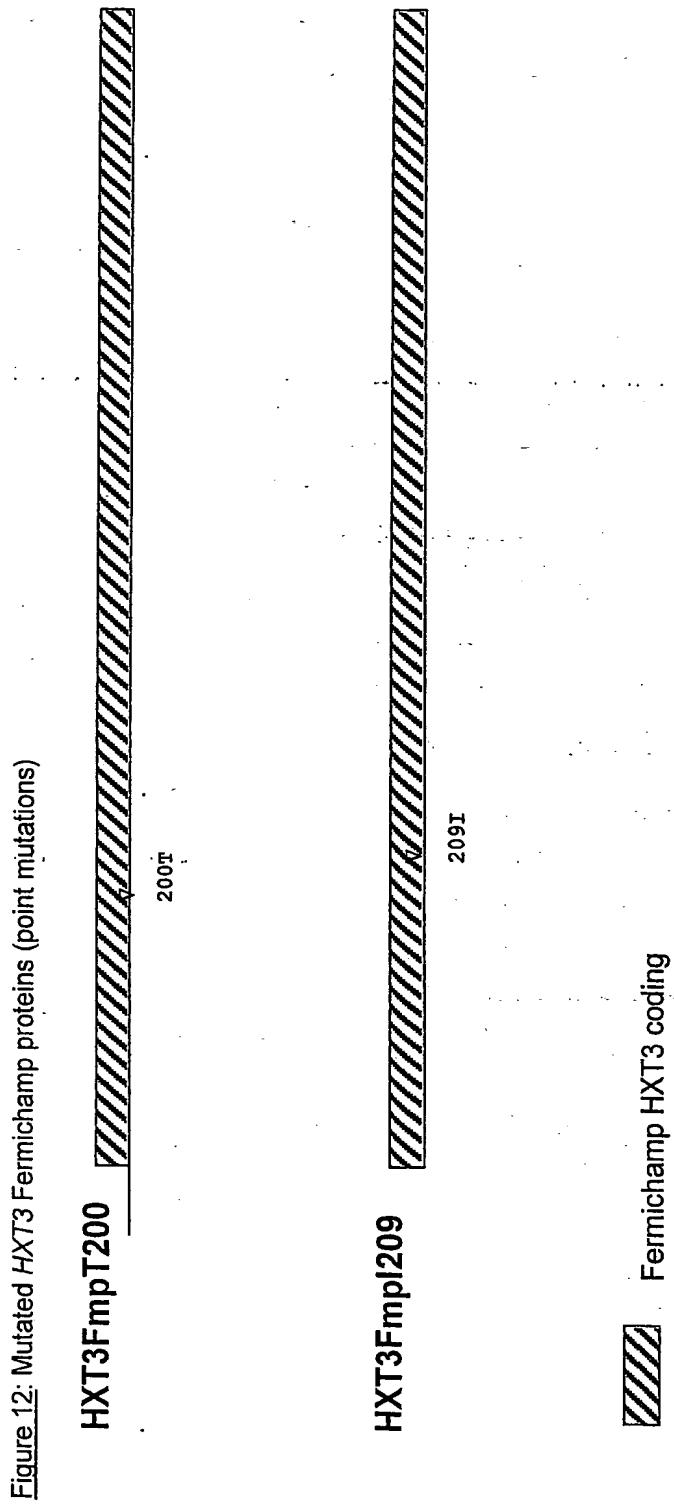


Figure 13: Glucose-Fructose ratio evolution during alcoholic fermentation

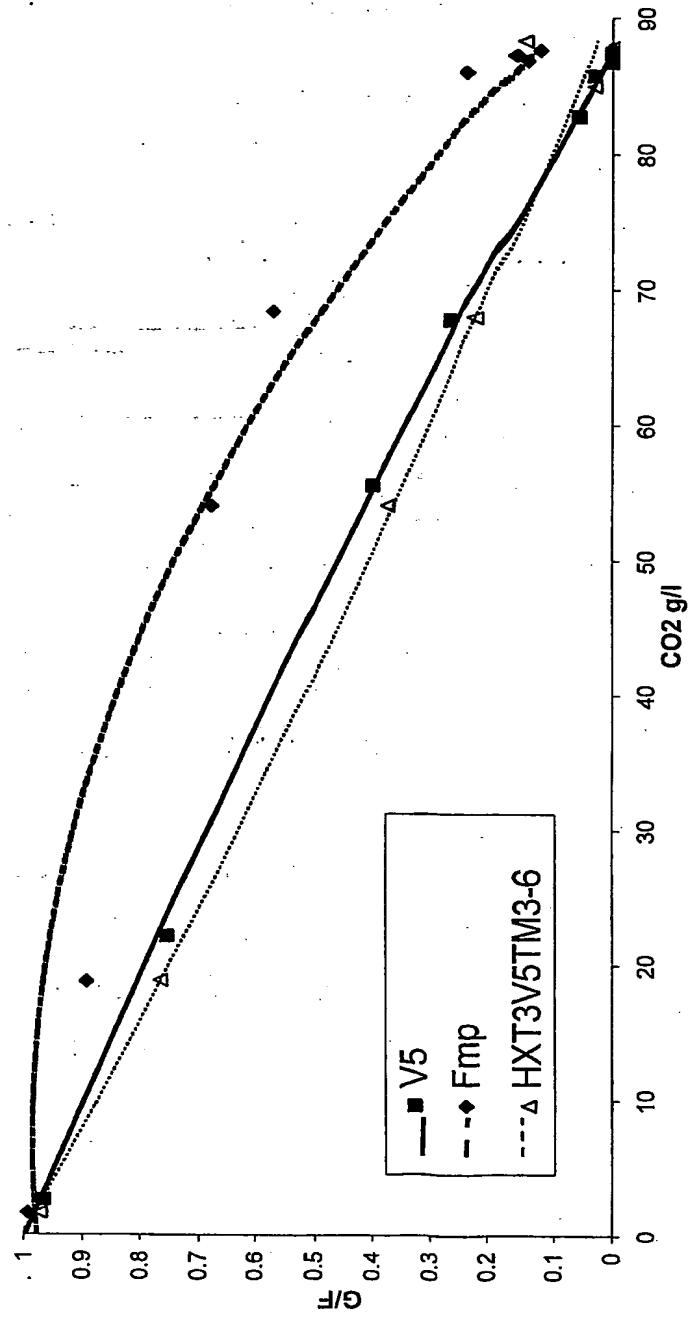


Figure 14: Glucose / Fructose ratio evolution during alcoholic fermentation

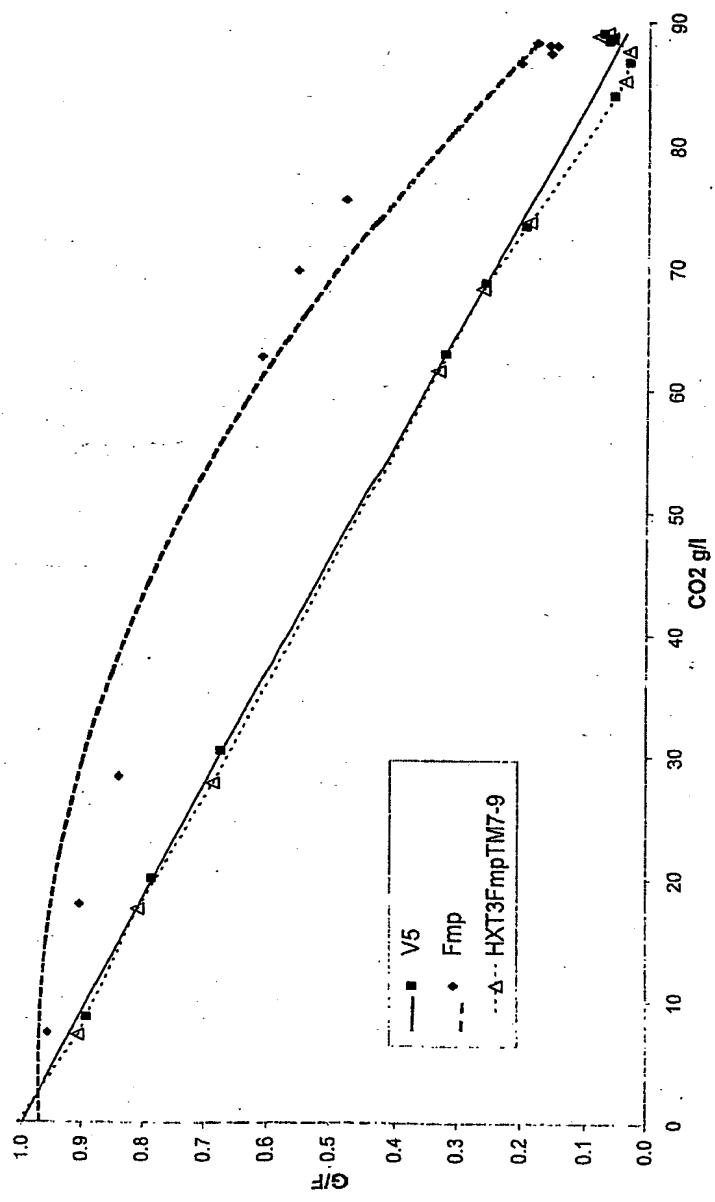


Figure 15: Glucose/Fructose ratio evolution during alcoholic fermentation

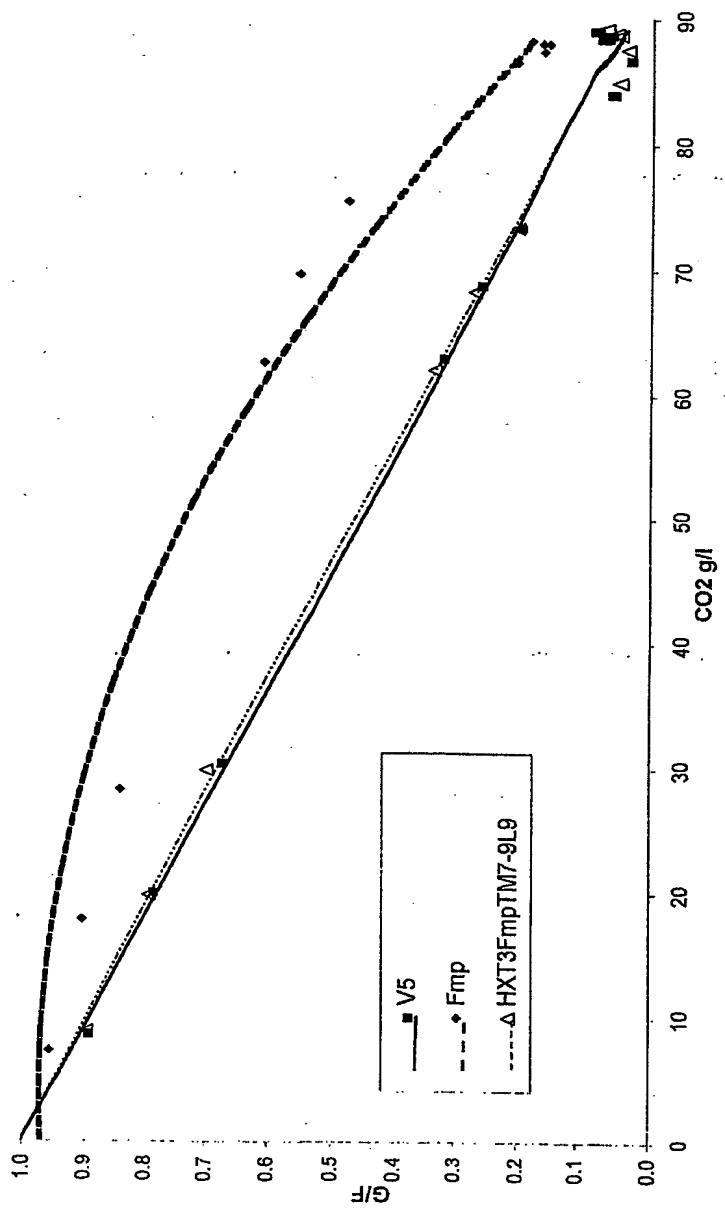


Figure 16: Glucose/Fructose ratio evolution during alcoholic fermentation

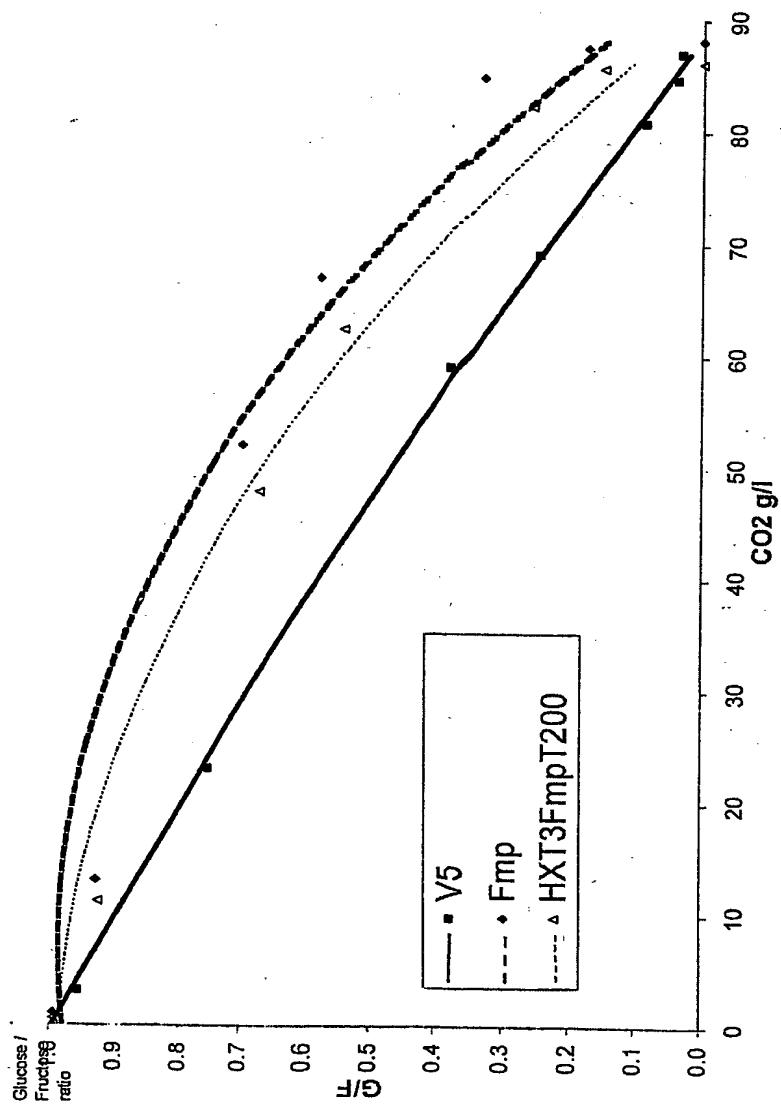


Figure 17: Glucose/Fructose ratio evolution during alcoholic fermentation

